Amendments to the Specification:

Amend the ABSTRACT OF THE INVENTION as follows:

An embodiment of the invention incorporates, or encapsulates, authentication mechanisms into an initiation phase of a transmission protocol session. In a preferred embodiment, <u>Extensible Authentication Protocol (EAP)</u> authentication steps are included in the three-way handshake of a request to establish a <u>Transmission Control Protocol / Internet Protocol (TCP/IP)</u> session. An EAP authentication session request can be designated within the standard <u>Transmission Control Protocol (TCP)</u> segment by using unused flags in the segment header. Another way to designate the request is to include a predefined option value in the header.

Amend page 5, paragraph 25, as follows:

[25] Another embodiment allows an authentication session request to be signaled by using a "single octet of option-kind" as specified in RFC 793. Where this option exists in the TCP header the packet is marked as an EAP/TCP packet and the client/server must unwrap the EAP data and act according to the EAP protocol. While any suitable values can be used, a preferred embodiment uses 00001110 as the server-to-client option value and 00001010 as the client-to-server option value. Other embodiments can use other values. For example, suitable values can be negotiated with ~~www.iana.org or other~~ appropriate organizations or standards bodies. In some applications it may not be necessary to have separate values for server-to-client and client-to-server segments. In yet other embodiments it may be beneficial to use more than two values to designate different types of messages, conditions, controls, or for other reasons.

Amend paragraph [47] as follows:

[47] Any suitable programming language can be used to implement the routines of the present invention including C, C++, [[Java]] <u>JAVA</u>^{TM}, assembly language, etc. Different programming techniques can be employed such as procedural or object oriented. The routines can execute on a single processing device or multiple processors. Although the steps, operations or computations may be presented in a specific order, this order may be changed in different embodiments. In

some embodiments, multiple steps shown as sequential in this specification can be performed at the same time. The sequence of operations described herein can be interrupted, suspended, or otherwise controlled by another process, such as an operating system, kernel, etc. The routines can operate in an operating system environment or as stand-alone routines occupying all, or a substantial part, of the system processing.